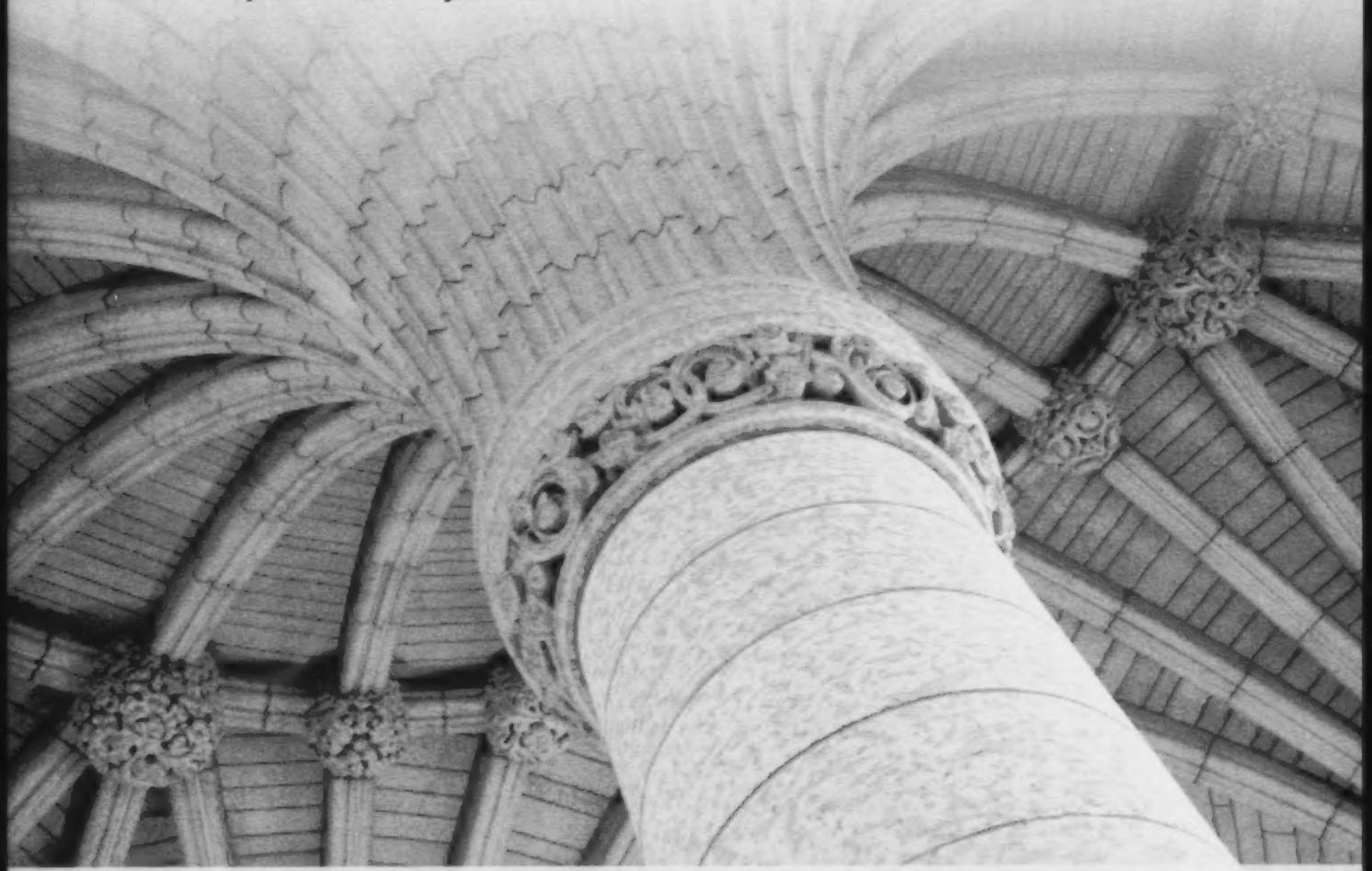
HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

RETHINKING CANADA'S ENERGY INFORMATION SYSTEM: COLLABORATIVE MODELS IN A DATA-DRIVEN ECONOMY

Report of the Standing Committee on Natural Resources

James Maloney, Chair



OCTOBER 2018
42nd PARLIAMENT, 1st SESSION

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Chair

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NOTICE TO READER

Reports from committee presented to the House of Commons

Presenting a report to the House is the way a committee makes public its findings and recommendations on a particular topic. Substantive reports on a subject-matter study usually contain a synopsis of the testimony heard, the recommendations made by the committee, as well as the reasons for those recommendations.

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THE STANDING COMMITTEE ON NATURAL RESOURCES

has the honour to present its

TENTH REPORT

Pursuant to its mandate under Standing Order 108(2), the Committee has studied the Current State and Future of National Energy Data and has agreed to report the following:

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SUMMARY

Canada needs accurate, timely and reliable energy data to support evidence-based conversations, policies and business decisions regarding the energy sector and its impact on the economy, society and environment. Demand for energy data is constantly increasing owing to rapid evolutions in the Canadian energy sector, including the advent and growth of new technologies, Canada's ongoing transition to a lower-carbon economy, and greater public engagement in energy policy and decision making. Improving the quality of energy data is a national goal, agreed to by all the provinces and territories as part of the Canadian energy strategy in 2015.

Canada has a decentralized energy information system, comprising a broad community of data users and collectors. The federal government alone produces energy data through four different departments or agencies: Statistics Canada, Natural Resources Canada, the National Energy Board, and Environment and Climate Change Canada. Experts generally agree that the quality of Canada's national energy information can be improved – namely, in terms of its accessibility, clarity, coherence, comparability, timeliness and completeness. Most concerns appear to stem from insufficient harmonization among the myriad energy data collectors and stakeholders across the country, as well as proprietary and/or confidentiality rules that limit the accessibility or transparency of certain data. In certain industries, some Canadian energy information needs better coverage or granularity, or is lacking completely.

Canada would benefit from a "one-stop shop" where Canadians, industry and policy makers could access detailed regional and national energy information that is accurate, timely, transparent, comprehensive, user-friendly, internally-consistent, free of charge, responsive to the needs of different sectors, and independent of political influence. This goal could be accomplished through existing national data providers, such as Statistics Canada or the National Energy Board, or by creating an entirely new energy information agency that would function independently of government. In either case, reforming Canada's national energy information system requires significant additional attention from the federal government, in collaboration with industry, academia, civil society, Indigenous governments and communities, and provincial/territorial governments. The federal government needs to focus on producing meaningful and competitive information to support Canada's rapidly evolving energy sector in a data-driven global economy.

LIST OF RECOMMENDATIONS

As a result of their deliberations, committees may make recommendations which they include in their reports for the consideration of the House of Commons or the Government of Canada. Recommendations related to this study are listed below.

Recommendation 1

The committee recommends that the Government of Canada designate a "one-stop shop" for detailed regional and national energy information that is accurate, timely, transparent, comprehensive, user-friendly, internally-consistent, free of charge, responsive to the needs of different sectors, and independent of political influence. To this end, the committee recommends that the government work with industry, civil society, research institutions, Indigenous governments and communities, and provincial/territorial governments to:

a) **assess the feasibility of housing the proposed information provider within an existing federal organization versus creating an entirely new Canadian energy information agency;**

b) **ensure that the proposed energy information provider is politically independent and has sufficient legislative power to collect, validate, analyse and distribute energy data under competitive timelines;**

c) **establish sufficient safeguards to protect the sensitivity and/or confidentiality of energy data reported by the public, private companies and other organizations; and**

d) **incorporate best practices from international counterparts, where appropriate.**

Recommendation 2

The committee recommends that the Government of Canada work with industry, research institutions, Indigenous governments and communities, and provincial/territorial governments to identify gaps in Canadian energy information, and to mitigate these gaps by providing financial, legal and/or administrative support to relevant data collectors, as needed.

Recommendation 3

The committee recommends that the federal government work with industry, civil society, research institutions, Indigenous governments and communities, and provincial/territorial governments to standardize energy definitions, measurements and reporting standards across Canadian jurisdictions and reporting organizations, and to ensure that these standards are consistent with international norms and best practices.

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RETHINKING CANADA'S ENERGY INFORMATION SYSTEM: COLLABORATIVE MODELS IN A DATA-DRIVEN ECONOMY

A. INTRODUCTION: THE VALUE OF ENERGY DATA

Between 26 April and 12 June 2018, the House of Commons Standing Committee on Natural Resources (the committee) conducted a study on the current state and future of Canada's national energy data. The committee heard from a wide range of experts about the benefits of, and gaps in, Canadian energy information systems, as well as best practices for managing energy data and analyses moving forward. The committee is pleased to present its final report, which includes the study findings and recommendations to the Government of Canada.

> **"Data is a national resource that is no different from our natural resources like energy, water, minerals, metals, or timber. If developed appropriately, it has the potential to yield enormous value for all Canadians."**
>
> Ian Nieboer,
> RS Energy Group

Canada needs accurate, timely and reliable energy data to support fact-based conversations, policies and business decisions regarding the energy sector and its impacts on the economy, society and environment. High-quality energy information can foster economic competitiveness by improving the understanding of the value proposition of energy resource development and associated social and environmental impacts, thereby facilitating investment decisions, enabling more expedient and environmentally-friendly projects, and strengthening public confidence in Canadian energy policy and decision making (Figure 1).[1]

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1 Standing Committee on Natural Resources (RNNR), *Evidence*, 1st Session, 42nd Parliament (*Evidence*): Greg Peterson (Director General, Agriculture, Energy, Environment and Transportation Statistics, Statistics Canada [StatsCan]); Laura Oleson (Director General, Energy Policy Branch, Energy Sector, Department of Natural Resources [NRCan]); Jim Keating (Executive Vice-President, Corporate Services and Offshore Development, Nalcor Energy); Timothy Egan (President and Chief Executive Officer, Canadian Gas Association); Judith Dwarkin (Chief Economist, RS Energy Group); Monica Gattinger (Professor, Chair of Positive Energy, Director of Institute for Science, Society and Policy, University of Ottawa); and Ian Nieboer (Director, RS Energy Group).

Figure 1: The Contribution of Energy to the Canadian Economy

Energy accounted for 10% of GDP in 2017
Energy accounted for 30% of capital expenditure in 2017
Energy sector employed 4% of Canada's labour force in 2017
$23 billion of government revenues came from the energy sector in 2015
Energy is responsible for 18.8% of Canada's exports in 2017
Energy sector contributes 4% to Canada's overall business expenditure in R&D in 2017

Source: Statistics Canada (as presented in a document submitted to RNNR).

Owing to the rapidly evolving nature of the energy sector, demand for Canadian energy data is constantly increasing. The advent and growth of new energy sources and technologies, coupled with Canada's ongoing transition to a lower-carbon economy and greater public engagement in energy decision making are creating new demand for energy information.[2] In the words of Laura Oleson of Natural Resources Canada (NRCan):

> As we look to the future, there are promising opportunities for energy data to be used in new ways to optimize industrial processes and reduce environmental impacts. Big data is enabling smart grids to improve efficiency and reduce the cost of electricity. Oil and gas companies are using AI-capable robots in oil exploration and production, which can increase productivity while reducing worker risk. Incorporating AI, big data analytics, and other information-based technologies into how we make, move, and use energy will be key for the continued competitiveness of Canada's energy industries....

In 2015, all the provinces and territories reached an agreement on a Canadian energy strategy that included goal 3.1: to "[i]mprove" the "quality of energy data across Canada."[3] The aim of this report is to emphasize the importance of this national goal, and to offer

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2 RNNR *Evidence*: Peterson (StatsCan); Oleson (NRCan); Allan Fogwill (President and Chief Executive Officer, Canadian Energy Research Institute [CERI]); Patricia Lightburn (Manager, Science and Policy, David Suzuki Foundation); Pierre-Olivier Pineau (Professor, Energy Sector Management, HEC Montreal); Karine Péloffy (Managing Director, Quebec Environmental Law Centre); and Benjamin Israël (Analyst, Pembina Institute).

3 RNNR *Evidence*: Fogwill (CERI).

further policy guidance to the Government of Canada, based on evidence from diverse experts from industry, civil society, academia, Indigenous organizations, the public sector and international agencies. The next section provides a brief assessment of Canada's current energy information system, followed by a discussion of policy proposals and best practices for managing national energy data moving forward.

B. CANADA'S ENERGY INFORMATION SYSTEM(S)

Canada has a broad community of energy data users and collectors. Data users include policy makers and regulators at all levels of government; industry producers and private sector investors; academics; Indigenous governments and communities; non-governmental organizations; international partners and agencies; as well as individuals, both as consumers and citizens. Similarly, Canadian energy information is the collective product of different businesses, governments, research institutions, provincial and territorial utilities, and non-governmental organizations, among others.[4]

> **"People are becoming far more engaged in their energy lives and they want energy information."**
>
> Monica Gattinger,
> University of Ottawa

In the federal government, most of the data related to Canadian energy is the product of the following four departments or agencies:

- **Statistics Canada** (StatsCan) collects, compiles and analyses information about industries and individuals in Canada, and has the legislative authority, under the *Statistics Act*, to acquire administrative data from any level of government, corporation or organization across the country. Much of StatsCan's energy data is collected and disseminated by the department's energy statistics program whose focus is on the production, transformation, distribution and consumption of energy. Other areas of StatsCan collect information pertaining to the energy sector, such as labour force statistics and information on energy science and technology.[5]

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4 RNNR *Evidence*: Oleson (NRCan); Gattinger (University of Ottawa); Peterson (StatsCan); Jim Fox (Vice-President, Integrated Energy Information and Analysis, National Energy Board [NEB]); Keating (Nalcor Energy); Egan (Canadian Gas Association); Francis Bradley (Chief Operating Officer, Canadian Electricity Association); and Dwarkin (RS Energy Group).

5 RNNR *Evidence*: Peterson (StatsCan).

- **Natural Resources Canada** (NRCan) has a mandate under the *Energy Efficiency Act* to "provide energy use data to Canadians and to report to Parliament." The department is also responsible for Canada's monthly and annual submissions to the International Energy Agency (IEA), and publishes an annual *Energy Fact Book*, providing "key information on energy in Canada in a format that is accessible to non-experts." NRCan works in collaboration with various partners, including StatsCan, provincial and territorial government regulators and utilities, industry and research institutions.[6]

- **The National Energy Board**'s (NEB) Departmental Results Framework includes the collection, monitoring, analysis and publication of energy information as part of the agency's core responsibilities. While some data is collected by the NEB directly, more is sourced from federal and provincial agencies or, where necessary, third-party sources. The NEB uses energy data to create reports on various energy topics, including the agency's short-term *Market Snapshots* and long-term annual energy outlooks, entitled *Canada's Energy Future*.[7]

- **Environment and Climate Change Canada**'s (ECCC) national reports and inventories include information pertaining to the energy sector – such as Canada's Inventory of Greenhouse Gas Sources and Sinks, the Air Pollutant Emissions Inventory and the Black Carbon Emissions Inventory. The department collects some of its own data – for example, through the Greenhouse Gas Reporting Program – and uses energy statistics and projections produced by StatsCan and the NEB. Where needed, ECCC also consults with provinces, territories and other third parties.[8]

The Government of Canada has an open data plan that aims to help guide developments in energy data and information-sharing policies. According to Pippa Feinstein of Lake Ontario Waterkeeper, the plan commits to "expanding and improving open data across federal public services with special attention paid to the extracted sector, federal science activities, and geospatial data." In addition, Canada collaborates with international partners and agencies on information sharing initiatives pertaining to energy. A recent

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6 RNNR *Evidence*: Oleson (NRCan).

7 Document submitted to RNNR by the NEB, entitled *NEB Opening Statement*.

8 RNNR *Evidence*: Jacqueline Gonçalves (Director General, Science and Risk Assessment, Environment and Climate Change Canada [ECCC]) and Derek Hermanutz (Director General, Economic Analysis Directorate, Strategic Policy Branch, ECCC).

example is the North American Cooperation on Energy Information initiative, which, according to Ms. Oleson, has led to the creation of "the first ever shared map of North American energy supply infrastructure."

> **"Organization of [energy] information is important, otherwise we risk being a country that is data-rich but information-poor."**
>
> Greg Peterson,
> Statistics Canada

In its international recommendations for energy statistics, the United Nations Statistical Commission put forward best practices and principles regarding energy information, including: relevance and completeness, timeliness and punctuality, accuracy and reliability, coherence and comparability, accessibility and clarity, and political independence.[9] Witnesses generally agree that Canada's energy information system could be improved according to these criteria. For example, the committee heard the following:

- **Canada's decentralized energy data, while abundant, can be difficult to navigate, interpret and verify, especially for non-experts.**[10] Alan Fogwill of the Canadian Energy Research Institute (CERI) explained that generating a complete data set "requires a review of up to 20 sources of major and minor publications, [which is] beyond the resources and expertise of most stakeholders." A survey conducted by CERI found that stakeholders have different levels of trust in producers of Canadian energy information: 67% trust in government agencies, 17% in governments, 50% in economic experts and academia, and 42% in industry associations (Figure 2).

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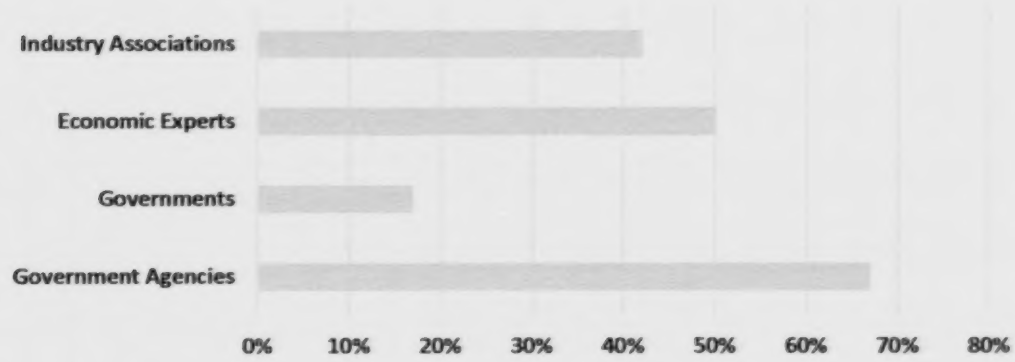
9 RNNR *Evidence*: Gattinger (University of Ottawa).

10 RNNR *Evidence*: Bruce Cameron (Senior Advisor and Consultant, Quality Urban Energy Systems of Tomorrow [QUEST]); Kevin Birn (Director, Energy, IHS Markit); Keating (Nalcor Energy); Gonçalves (ECCC); Peterson (StatsCan); David Layzell (Professor and Director, Canadian Energy Systems Analysis Research [CESAR]); Ethan Zindler (Head of Americas, Bloomberg New Energy Finance [Bloomberg]); Fogwill (Canadian Energy Research Institute); Bruce Lourie (President, Ivey Foundation Toronto); Pineau (HEC Montreal); Kathleen Vaillancourt (President, ESMIA Consultants Inc., and Representative, Canadian Academy of Engineering); Bill Eggerston (Executive Director, Canadian Association for Renewable Energies); Israël (Pembina Institute); Gattinger (University of Ottawa); Maike Luiken (President, IEEE Canada); Fox (NEB); Oleson (NRCan); Layzell (CESAR); Greg Abbott (Vice-President, Market Operations, Intercontinental Exchange [ICE NGX]); Lightburn (David Suzuki Foundation); Nieboer (RS Energy Group); Joy Romero (Vice-President, Canadian Natural Resources Limited, and Chair, Clean Resource Innovation Network [CRIN]); and Dwarkin (RS Energy Group).

Figure 2: Level of Stakeholder Trust in Different Producers of Energy Information in Canada



Source: Canadian Energy Research Institute (as presented in RNNR *Evidence*).

- **Data measurement, definitions, policy tools and reporting standards vary among Canadian jurisdictions and information providers, leading to inconsistencies that limit the coherency and usability of some national data and can create confusion as to which sources are official or correct.**[11] Out of 26 indicators assessed by CERI from various sources, 42% differed in value by more than 10%. Furthermore, according to Monica Gattinger of the University of Ottawa, "there are mountains of data in various organizations that aren't being transformed into information," owing partly to gaps in data coordination and harmonization.

- **Canadian energy data are generally reported 12 to 18 months after the end of the year; some are reported up to five years behind. These time lags are considered too long for a fast-paced economy with ever growing demand for real-time information.**[12] Joy Romero of the Clean Resources Innovation Network explained that the lack of real-time data is particularly challenging for Canada's innovation ecosystem, stating that Canada needs a data communications platform that is "searchable in real time, uses data analytics, and will connect all superclusters and innovators to a more fulsome picture of innovation in Canada."

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11 Ibid.

12 RNNR *Evidence*: Fogwill (CERI); Duncan Millard (Chief Statistician and Head of the Energy Data Centre, International Energy Agency [IEA]); Cameron (QUEST); Patrick DeRochie (Climate and Energy Program Manager, Environmental Defence); Israël (Pembina Institute); Lightburn (David Suzuki Foundation); Romero (CRIN); Donald Mustard (Researcher); and Dwarkin (RS Energy Group).

- **Researchers are sometimes unable to access the source files of national energy analyses due to rules of proprietary and/or confidentiality.**[13] According to the Canadian Academy of Engineering, some data models are proprietary to consulting companies and are accessible only to paying clients; others are proprietary to government agencies that are not mandated to provide access and support to all interested parties. Greg Peterson of StatsCan explained that the energy sector is dominated by a small number of large players, which "leads to issues of data suppression in order to protect the confidentiality of individual respondents." Patrick Brown of Hydro Ottawa pointed out that matters of confidentiality arise, "first and foremost, when customer information is involved."
- **Some Canadian energy information is incomplete or lacking.** A CERI study found that only 38% of the 189 potential energy indicators are gathered in Canada. Examples of energy topics that need better coverage include, among others:
    - emerging technologies and new energy services, especially for biomass and new renewable energy sectors such as geothermal and solar photovoltaic;[14]
    - oil and gas storage, refined production, interprovincial transfers, exports and transportation methods;[15]
    - end-use energy consumption and conservation patterns, particularly for the electricity sector which generally lacks sector-specific economic data;[16]

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13 RNNR *Evidence*: Pippa Feinstein (Counsel, Lake Ontario Waterkeeper); Bradford Griffin (Canadian Energy and Emissions Data Centre [CEEDC]); Romero (CRIN); Vaillancourt (Canadian Academy of Engineering); Péloffy (Quebec Environmental Law Centre); Cameron (QUEST); Lourie (Ivey Foundation); and the Canadian Academy of Engineering (Written Submission).

14 RNNR *Evidence*: Fogwill (CERI); Pineau (HEC Montreal); Cameron (QUEST); Eggerston (Canadian Association for Renewable Energies); Fox (NEB); Peterson (StatsCan); Patrick Bateman (Director, Canadian Solar Industries Association, Canadian Council on Renewable Electricity [CanCORE]); Gonçalves (ECCC); Israël (Pembina Institute); Vaillancourt (Canadian Academy of Engineering); Lightburn (Suzuki Foundation); and Alison Thompson (Chair of the Board, Canadian Geothermal Energy Association).

15 RNNR *Evidence*: Abha Bhargava (Director, Energy Integration, NEB); Egan (Canadian Gas Association); Birn (IHS Markit); Millard (IEA); Vaillancourt (Canadian Academy of Engineering); and DeRochie (Environmental Defence).

16 RNNR *Evidence*: John Conti (Deputy Administrator, U.S. Energy Information Administration [U.S. EIA]); Eggerston (Canadian Association for Renewable Energies); Zindler (Bloomberg); Luiken (IEEE); Bateman (CanCORE); and the Canadian Academy of Engineering (Written Submission).

- socioeconomic indicators – namely, information on low-income households facing energy poverty[17] and Indigenous women who, according to Myriam Landry of Quebec Native Women, "benefit the least from the economic impacts of [energy] projects and ... will face the most direct negative impacts;" and

- energy and carbon flow in other economic sectors (e.g., forestry and agriculture).[18]

Given that most energy resource development falls under provincial jurisdiction, rethinking Canada's energy information system has been an intergovernmental endeavor. According to Ms. Oleson, the federal government has been involved in ongoing discussions with the provinces and territories about how Canadian natural resources data can be improved more broadly, including larger questions about what data should be required by government. In that sense, she thinks reforms to Canada's energy information system "would fit into a broader, all-encompassing national data strategy." Furthermore, Mr. Peterson told the committee that StatsCan has embarked on a modernization initiative that is putting more emphasis on collaboration and partnerships, stating that Canada has to adopt "a more integrated approach to data, taking advantage of these new sources of information that are becoming available and finding mechanisms of putting them together."

C. TOWARDS A ONE-STOP ENERGY SHOP FOR CANADA

In-person and online consultations conducted by NRCan's Generation Energy Council found that Canadians want "a one-stop shop where they can go for reliable and independent information" on energy in Canada. Furthermore, the Expert Panel on the Modernization of the National Energy Board envisions the creation of "a new, independent Canadian Energy Information Agency, separate from both policy and regulatory functions, accountable for providing decision-makers and the public with critical energy data, information, and analysis."[19]

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17 RNNR *Evidence*: Theresa McClenaghan (Executive Director and Counsel, Canadian Environmental Law Association).

18 RNNR *Evidence*: Layzell (CESAR) and Péloffy (Quebec Environmental Law Centre).

19 RNNR *Evidence*: Oleson (NRCan) and Dusyk (Pembina Institute).

> **"Data systems that are good are focused, they collect only the data needed, they maximize the use of that data so that it's collected once and used often."**
>
> Duncan Millard,
> International Energy Agency

Several witnesses support the idea of an independent energy information agency in Canada. The committee heard that, by working with existing data providers and energy stakeholders, such an agency should be mandated to collect, validate, analyse and distribute detailed regional and national energy information that is accurate, timely, transparent, comprehensive, user-friendly, internally-consistent, free of charge, responsive to the needs of different sectors, and independent of political influence. To this end, the proposed agency would aim to accomplish the following objectives:

- streamline data collection by establishing common definitions and reporting standards;
- ease the administrative burden on reporting organizations by collecting information only once and subsequently presenting it in the same place for the benefit of all;
- level the playing field among data users by making high-quality energy information accessible free of charge;
- establish safeguards to protect the sensitivity and/or confidentiality of energy data reported by the public, private companies and other organizations;
- provide authoritative energy reports and data analysis tools to facilitate evidence-based decision making and improve public energy literacy – including quarterly reports and forecast scenarios on energy supply, demand, sources, downstream consumption and trade, both interprovincially and internationally, as well as information that addresses the socioeconomic and environmental dimensions of Canadian energy (e.g., climate change impacts, cross-country data on energy poverty, and energy information specific to Indigenous peoples); and finally,

- assume an active role in energy decision making by advising government departments and agencies on energy matters upon request, and by making experts available to appear as witnesses in energy project hearings.[20]

The committee heard that the proposed energy information agency should work in partnership with existing federal government departments, namely StatsCan and NRCan, as well as Indigenous governments and communities, provincial and territorial governments, the private sector, and other relevant energy data groups and public interest organizations across Canada.[21] For example, Francis Bradley of the Canadian Electricity Association recommended that the agency consist of partnerships and information sharing agreements between the federal, provincial and territorial governments, "utilizing Statistics Canada for primary-source energy data or perhaps adopting this function itself." Similarly, David Layzell of CESAR stated that the proposed agency needs to be closely linked to government departments that have the authority to collect energy data; "it needs a governance structure that engages the provinces, territories, municipalities, and industry associations that provide the data, as well as those organizations that are going to be users of that data."

The committee also heard that a national energy information agency could be housed within existing federal organizations, namely StatsCan or the NEB.[22] Judith Dwarkin of RS Energy Group warned that setting up a new agency may be costly, stating that the NEB has "mounds of data, [and has] already taken the first step towards something that could look like a national energy database." In considering whether or not to house an energy information provider within an existing federal organization or as a separate agency, government should take into account such factors including but not limited to: cost, political independence, ease of transition, pre-existing expertise and mandates, and the increased public trust enjoyed by independent agencies.

Witnesses identified several international models that could inspire reform in the Canadian energy information system – namely, the U.S. Energy Information Administration (EIA),

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20 RNNR *Evidence*: Bradley (Canadian Electricity Association); Pineau (HEC Montreal); Conti (U.S. EIA); Keating (Nalcor Energy); Mustard (Researcher); Vaillancourt (Canadian Academy of Engineering); Cameron (QUEST); Egan (Canadian Gas Association); Dusyk (Pembina Institute); Feinstein (Lake Ontario Waterkeeper); DeRochie (Environmental Defence); Péloffy (Quebec Environmental Law Centre); McClenaghan (Canadian Environmental Law Association); Romero (Clean Resource Innovation Network); Lightburn (Suzuki Foundation); Dwarkin (RS Energy Group); Layzell (CESAR); and Bateman (CanCORE).

21 RNNR *Evidence*: Bradley (Canadian Electricity Association); Layzell (CESAR); Fogwill (CERI); Lourie (Ivey Foundation); Dusyk (Pembina Institute); Mustard (Researcher); Feinstein (Lake Ontario Waterkeeper); Lightburn (Suzuki Foundation); Gattinger (University of Ottawa); Pineau (HEC Montreal); and DeRochie (Environmental Defence).

22 RNNR *Evidence*: Greg Peterson (StatsCan) and Dusyk (Pembina Institute).

Statistics Norway and the U.K. Committee on Climate Change.[23] According to John Conti of the EIA, most of his sophisticated clients extract 80% of their data needs from the EIA website on a weekly basis, which attests to the synergies and economies of scale of having one national energy agency. Pierre-Olivier Pineau of HEC Montreal pointed out that Norway, a major energy producer with a northern climate, would be a good source of inspiration for Canada. In addition to gathering statistics, the Norwegian equivalent of StatsCan conducts research and informs government, the investment community and the public on energy use, production and processing in Norway.

While reforming Canada's energy information system is not a greenfield operation, the committee heard that it requires "substantial additional attention," taking into account rapid evolutions in the energy sector, as well as the complex dynamics of data supply and demand in the digital age. According to Ms. Gattinger, reforms should be designed with long-term needs in mind and should aim to "maintain and leverage existing expertise and tailor Canada's system to the country's local circumstances." She added that Canada's focus needs to be on information, not just data: "Data is essential, but transforming data into information that's both relevant and accessible is crucial."

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23 **RNNR *Evidence*:** Fogwill **(CERI);** DeRochie **(Environmental Defence);** Dwarkin **(RS Energy Group);** Zindler **(Bloomberg);** Birn **(IHS Markit);** Mustard **(Researcher);** Lourie **(Ivey Foundation);** and Péloffy **(Quebec Environmental Law Centre).**

APPENDIX A
LIST OF WITNESSES

Organizations and Individuals	Date	Meeting
Department of Natural Resources	2018/04/24	92
Drew Leyburne, Director General Strategic Policy Branch, Strategic Policy and Results Sector		
Laura Oleson, Director General Energy Policy Branch, Energy Sector		
Department of the Environment	2018/04/24	92
Derek Hermanutz, Director General Economic Analysis Directorate, Strategic Policy Branch		
Jacqueline Gonçalves, Director General Science and Risk Assessment		
National Energy Board	2018/04/24	92
Abha Bhargava, Director Energy Integration		
Jim Fox, Vice-President Integrated Energy Information and Analysis		
Statistics Canada	2018/04/24	92
René Beaudoin, Assistant Director Environment, Energy and Transportation Statistics Division		
Greg Peterson, Director General Agriculture, Energy, Environment and Transportation Statistics		
Canadian Energy and Emissions Data Centre	2018/04/26	93
Bradford Griffin, Executive Director		
Canadian Energy Systems Analysis Research	2018/04/26	93
David Layzell, Professor and Director		
Quality Urban Energy Systems of Tomorrow	2018/04/26	93
Bruce Cameron, Senior Advisor and Consultant		
Tonja Leach, Managing Director Operations and Services		
Canadian Council on Renewable Electricity	2018/05/01	94
Patrick Bateman, Director Canadian Solar Industry Association		
John Drexhage, Consultant		

Organizations and Individuals	Date	Meeting
IHS Markit	2018/05/01	94
Kevin Birn, Director, Energy		
Nalcor Energy	2018/05/01	94
Jim Keating, Executive Vice-President Corporate Services and Offshore Development		
Canadian Electricity Association	2018/05/03	95
Francis Bradley, Chief Operating Officer		
Patrick Brown, Manager Regulatory Policy and Research, Hydro Ottawa		
Canadian Gas Association	2018/05/03	95
Paul Cheliak, Vice-President Government and Regulatory Affairs		
Timothy Egan, President and Chief Executive Officer		
International Energy Agency	2018/05/03	95
Duncan Millard, Chief Statistician and Head of the Energy Data Centre		
U.S. Energy Information Administration	2018/05/03	95
John Conti, Deputy Administrator		
As an individual	2018/05/08	96
Donald Mustard, Researcher		
Canadian Energy Research Institute	2018/05/08	96
Allan Fogwill, President and Chief Executive Officer		
Ivey Foundation	2018/05/08	96
Bruce A. Lourie, President		
Pembina Institute	2018/05/08	96
Nichole Dusyk, Postdoctoral Fellow Federal Policy		
Benjamin Israël, Analyst		
As an individual	2018/05/22	97
Pierre-Olivier Pineau, Professor Energy Sector Management		
Canadian Environmental Law Association	2018/05/22	97
Theresa McClenaghan, Executive Director and Counsel		

Organizations and Individuals	Date	Meeting
Canadian Academy of Engineering	2018/05/24	98
Kevin Goheen, Executive Director		
Kathleen Vaillancourt, President of ESMIA Consultants Inc.		
Clean Resources Innovation Network	2018/05/24	98
Joy Romero, Chair and Vice-President of Canadian Natural Resources Limited		
Environmental Defence Canada	2018/05/24	98
Patrick DeRochie, Climate and Energy Program Manager		
Québec Environmental Law Centre	2018/05/24	98
Karine Péloffy, Managing Director		
Canadian Association for Renewable Energies	2018/05/29	99
Bill Eggertson, Executive Director		
Canadian Geothermal Energy Association	2018/05/29	99
Zach Harmer, Operations Manager		
Alison Thompson, Chair of the Board		
Lake Ontario Waterkeeper	2018/05/29	99
Pippa Feinstein, Counsel		
David Suzuki Foundation	2018/05/31	100
Patricia Lightburn, Manager Science and Policy		
Quality Urban Energy Systems of Tomorrow	2018/05/31	100
Bruce Cameron, Senior Advisor and Consultant		
Tonja Leach, Managing Director Operations and Services		
Quebec Native Women Inc.	2018/05/31	100
Myriam Landry, Coordinator Environment and Sustainable Development		
As an individual	2018/06/05	101
Monica Gattinger, Professor, Chair of Positive Energy Director of Institute for Science, Society and Policy, University of Ottawa		
Intercontinental Exchange - ICE NGX	2018/06/05	101
Greg Abbott, Vice-President Market Operations		

Organizations and Individuals	Date	Meeting
Steve Lappin, President and Chief Operations Officer		
Rajeeve Thakur, General Counsel and Chief Compliance Officer		
RS Energy Group	2018/06/05	101
Judith Dwarkin, Chief Economist		
Ian Nieboer, Director		
Bloomberg New Energy Finance	2018/06/07	102
Ethan Zindler, Head of Americas		
Department of the Environment	2018/06/07	102
Derek Hermanutz, Director General Economic Analysis Directorate, Strategic Policy Branch		
Dominique Blain, Director Pollutant Inventories and Reporting		
Jacqueline Gonçalves, Director General Science and Risk Assessment		
IEEE Canada	2018/06/07	102
Maike Luiken, President		
Zoran Stojanovic, Director Information Systems, London Hydro		
Statistics Canada	2018/06/07	102
Greg Peterson, Director General Agriculture, Energy, Environment and Transportation Statistics		
René Beaudoin, Assistant Director Environment, Energy and Transportation Statistics Division		

APPENDIX B
LIST OF BRIEFS

Organizations and Individuals

Canadian Academy of Engineering

Canadian Geothermal Energy Association

Canadian Security Intelligence Service

Communications Security Establishment

IEEE Canada

Pembina Institute

REQUEST FOR GOVERNMENT RESPONSE

Pursuant to Standing Order 109, the Committee requests that the government table a comprehensive response to this Report.

A copy of the relevant *Minutes of Proceedings* (Meetings Nos. 92 to 103, 107 and 108) is tabled.

Respectfully submitted,

James Maloney
Chair

Supplementary Opinion of the New Democratic Party

The global energy market is changing rapidly as countries around the world transition to a low-carbon energy future. In order for Canada to play a role in this shift and to benefit from it, we need timely access to the best available information and science. This study was an important step in this process, and New Democrats have worked faithfully with our colleagues on the Natural Resources committee from the Liberal and Conservative parties in a constructive and collegial manner to ensure that we provide all Canadians, stakeholders and industry with those tools. As a result of that work, we believe this report is a strong reflection of our many shared concerns on this important issue.

However, we feel that some areas require a stronger response or more attention. This is particularly the case when it comes to the direction that the government chooses when it comes to how we collect energy data, how it is stored, analyzed, used and ultimately available in a user-friendly way to all potential users. Throughout the study, it was clear from the testimony given that the current Canadian energy data system is inadequate, leaving many users to go to foreign sources of data to try to plan for Canada's energy needs. Probably the starkest example of the current state of our energy data regime was given by Professor Pierre-Olivier Pineau, who stated the following before the committee:

> "If you go to Statistics Canada and you want to have access to the microdata, it's hell. Two years ago I actually went and asked for microdata to have my students work on real Canadian data, because I thought it was time to have students working on Canadian data and not always using the U.S. data because the U.S. data is available. I had to go through a lot of paperwork, sign a confidentiality agreement, and then they sent me a CD-ROM with the data, which was less interesting than the U.S. equivalent. In the end we did use the Canadian data in my class, but it's not user friendly. There are a lot of barriers. For the American data, you go on the website and you download the dataset. For Statistics Canada, you have to write them an email. They send you a letter. You have to read the contract, sign the contract, resend the contract, and then they send you the DVD or the CD-ROM with the data."

We see this current state of affairs as disturbing and something that needs to be remedied much sooner than later. As we have seen over the past many years across the country, confidence in the system we have to assess and approve large projects in Canada has fallen to new lows. It is a common theme for people on either side of a project that confidence is lacking that proper decisions are being made with the best available and neutral information. We see a proper Energy Information Agency as a key part of bringing confidence back to this broken system, giving everyone important facts and details from a trusted, neutral source in a way that is accessible and usable to all users.

Professor Monica Gattinger of the University of Ottawa testimony before the committee drove home this point, when she stated the following:

"For example, take a regulatory agency, whether it's the NEB or another regulatory agency at the federal or provincial level. These are organizations that, from the public's perspective, are predominantly about either approving or rejecting projects. If those organizations are also then responsible for creating energy information, does that then at some level put them into some sort of a conflict of interest?

If we want to have an agency that can do things proactively, for example, put out information around pipeline safety or put out information around tanker safety, if you're also the organization that is responsible for evaluating a proposed project that deals with those issues, will that be perceived as credible and independent by the public? Those are the sorts of things, I think, that I would hope the committee would look at very carefully.

I think the same thing would go, for example, with having an energy department as the node or focus for these efforts to the extent that an energy department has, as part of its mandate, the development of a particular industry sector. Again, from the perspective of the public, this could be also looked at as in some way tainting the capacity for that organization to be providing neutral, non-partisan, independent, balanced energy information.

What I would just end on here is, again, I recognize from a resource perspective the challenge of additional expenditures, but I would also invite the committee to think very seriously about what the costs are of not putting in place a system that is viewed as credible and independent by all parties when it comes to energy."

New Democrats have long called on the federal government to ensure that proper processes are in place when it comes to the assessment of large projects such as the Trans Mountain Expansion pipeline. Good information, openly available to all parties involved, is key to properly assessing these projects. It is extremely difficult to state that a project is in the national interest when you simply do not have the "neutral, non-partisan, independent, balanced energy information" needed to form that decision.

It is with that in mind that we believe the first recommendation of this report simply does not go far enough. We believe that the best course of action is for the government to create a completely independent energy information agency for Canada. We believe that the testimony reflects that, while currently existing agencies have expertise and ability to provide many of these functions, they simply do not possess the political independence, nor the level of public confidence required to have the best impact and outcome for the Canadian people. Allan Fogwill, President of the Canadian Energy Research Institute testified to the committee about the issues around the potential structure of this body and the importance of its independence. He stated that:

"A model like that might work, but the issue there is twofold. One is that because of the funding structure, they are always beholden to a third party. It doesn't really matter what organization you work for; you always know where your money is coming from and you make sure you don't piss those people off. If their money was solid and secure, then they'd have independence in that sense.

An example is the U.S. Energy Information Administration. They were created in the 1970s, and various parties have taken a run at them, both in terms of the legislation but also their budgets, and have been unsuccessful in attacking them. You can get at an organization through its funding, so that is one aspect.

The other aspect is the secretariat function, because the secretariat function can be staffed by someone else, and they'll staff it with the kind of people they want to have to make sure that whatever they're looking for from that organization is going to come out of that organization. I'm not saying that happens, but there's the opportunity for that to happen.

If there's an opportunity for that to happen, then other people would look at that and say they have a credibility issue. They have a credibility issue in terms of the budget as well as the staffing."

We believe that while we are taking the time to create a national energy data centre body, we need to get it right the first time. In our view, that means creating a fully independent agency, not simply housing such work inside an existing federal department. We believe that a new, fully independent agency will not only allow for the best results in regards to the proper collection and analysis of energy data and the ease of access and use of that data, we strongly believe that this independence will help to rebuild public trust in the energy regulation process in Canada.

We understand that taking this approach could potentially come at greater upfront cost, but as Professor Gattinger pointed out, we need to think about "what the costs are of not putting in place a system that is viewed as credible and independent by all parties when it comes to energy". We believe that in the current environment creating such a system will require more upfront investment than the alternative, but we believe that thanks to the mistakes made by previous governments, that is a cost that is not only justified but completely necessary to be able to achieve the best potential results from this endeavour.